Examiners Remarks:

Response to Amendment

1. Receipt of applicant's amendment filed July 12, 2007 is acknowledged. This amendment has been entered. By the amendment, applicant has amended claims 1 and 10, indicated claims 5, 7, 9, and 12 as cancelled, and indicated claims 13-15 as withdrawn.

2. In regard to claims 5, 7, 9, and 12, these claims are indicated as "cancelled", however, this claims include the text of the claim. Pursuant to 37 CFR 1.121(c)(4)(i), "No claim text shall be presented for any claim in the claim listing with the stats of `canceled' or `not entered.' However, in the interest of compact prosecution, the examiner has considered that applicant did not intend to include the text of the canceled claims. Any further listing of the claims must remove the text of those claims that are canceled.

APPLICANTS REPLY:

Regarding Examiners remarks 1 & 2 above, the applicant agrees with the conclusion. Also the remaining listing of claims as presented herein does not include text of the canceled claims accordingly.

Examiners Remarks:

3. The amendment filed July 12, 2007 is in response to the Final Office action mailed May 9, 2007. As discussed in more detail in the **Response to Arguments** section below, applicant's amendment does not overcome the prior art of record. In particular, applicant's amendment does not overcome the examiner's interpretation of the claim recitation of a "circular disc further includ[ing] multiple cross bars that function to deflect, condition, and block gases from escaping through a central area of the flow conditioner" as reading on the disc (at least 148, Figs. 14 and 15) of Gordon. This disc is considered to have a central region into which bent portions (166)

extend. While the absolute center or centermost portion (158) of the disc (148) is not obstructed, applicant's claim does not particularly define that the absolute center or centermost portion must be blocked, instead referring only to "a" central region.

However, as applicant has filed the application *pro se*, pursuant to MPEP 707.07(j)(I), the examiner has considered whether the claims would be allowable if amended to particular recite that the cross bars function to deflect, condition, and block gases from escaping through the centermost portion of the disc. However, in light of the teachings of the newly applied reference to Lyman (see rejection below), the examiner has not been able to identify this feature as patentably distinct. In the interest of compact prosecution and clarity of the record, the examiner has set forth below a rejection on the basis of the teachings of Lyman. As this rejection was not necessitated by the amendment filed July 12, 2007, the Finality of the prior Office action is withdrawn. However, as this Office action would properly have been made Final if previously presented, **this Office action is made** FINAL.

Examiners Remarks:

Claim Objections

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-4, 6, 8, 10, and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by **U.S. Patent No. 4,183,896 to Gordon** ("Gordon") (previously cited).

Gordon discloses in the specification and Figs. 1-15 an invention in the same field of endeavor as applicant's invention and as described in applicant's claims 1-4, 6, 8, 10, and 11. In particular, in regard to at least claims 1 and 10, Gordon shows a heat reactor system comprising

en elongated tubular housing (112, 112, and 116, see Figs. 9 and 10) having an inlet duct (146) for receiving injected fuel and air and an outlet duct (exit of 116) for expelling heated gases (see Fig. 10). The elongated tubular housing is portioned internally by at least one flow conditioner (148, 150, and/or 152) perpendicularly positioned along the axis of the housing, thus forming at least a first combustion chamber (114) and at least one reactor compartment (compartment containing the flow conditioners). The reactor compartment includes only the three circular discs (148, 150, 152) and thus has no moving parts as recited in claim 1.

Further, in regard to claims 1 and 10, the circular discs (148, 150, 152) are considered to have multiple slits/slots (156) there through (see at least col. 7, lines 30-31) wherein the slits (156) are also designated as bent wall portions/vanes as recited (see at least col. 7; lines 37-38). Further, the discs include multiple cross bars in the same manner as recited by applicant (see at least Figs. 14 and 15). In this regard, at least the top surfaces portions (shown as 166 in Figs. 14 and 15) are considered to be cross bars that function to deflect, condition, and block gases escaping from "a" central region (i.e. any region central to the circular frame of the discs, see Figs. 14-16)

Additionally, Gordon provides that the fuel and air passing into the combustion chamber are ignited by igniter (190) in order to release heat (see col. 8, lines 34-54). Further, the baffle plates/discs (148, 150, 152) are arranged such that the openings in the plates are non-aligned in order to produce a diverted and turbulent flow there through that serves to increase the retention/dwell time of the gases in the combustion section (114) (see col. 7, lines 42-45 and col. 9, lines 13-18). This turbulent and diverted flow for increased retention time is considered to suggest the recited spiraling motion for increased dwell time as recited in applicant's claims. Lastly, the result is non-polluted (i.e. pollution free or virtually pollution free) exhaust fumes (see at least col. 1, lines 12-15).

In regard to at least claims 2-4, the embodiment of Figs. 1-8 of Gordon describes that the tubular housing (15) is made of steel, a heat resistant material, and the interior flow

conditioner/discs (13) are made of ceramic, also a heat resistant material. These elements are considered to correspond to the housing (116) and discs (148, 150, 152) shown in the embodiment of Fig. 10 and suggest that these elements of Fig. 10 would also be made of steel and ceramic, respectively.

In regard to at least claim 6, note the multiple reactor compartments formed by multiple flow conditioners (148, 150, 152).

In regard to claim 8, Fig. 10 shows that the plates (148, 150, and 152) are arranged in grooves within the housing 116). Further, as previously noted, the plates (148, 150, and 152) are considered to correspond to discs (13) of a prior embodiment of Gordon and expressly recited to be in grooves (29) that serve to orient the discs (see at least col. 4, lines 16-20). The reception of the plates (148, 150, and 152) in the grooves is considered to suggest the multiple locating tabs recited.

In regard to claim 11, at least gas is disclosed as the fuel passed to combustion chamber (114) (see at least col. 8, lines 55-59).

Examiners Remarks:

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Alternatively, claims 1-4, 6, 8, 10, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **U.S. Patent No. 4,183,896 to Gordon** ("Gordon".) (previously cited) in view of **U.S. Patent No. 4,109,753 to Lyman** ("Lyman") (cited on PTO-892 form mailed 4/21/2006).

As noted above in the discussion of the teachings of the Gordon reference, Gordon is considered to reasonably suggest all the limitations of applicant's claims as recited. In particular, as noted above, the outward bents wall portions (166) of the plates/discs (148, 150, 152), which function to "induce a turbulent flow in the gas stream and increase the retention time of the exhaust gases through the combustion section 114 and help provide more time for a complete combustion of the pollutants," have been regarded as multiple cross bars that function to "deflect, condition and block gases from escaping through a central area of the flow conditioner" thus providing a "spiraling motion [that] provides increased dwell time for total combustion" as recited in applicant's claims I and 10.

However, the following discussion is considered to address applicant's claims if interpreted to require that the multiple cross bars function to deflect, condition and blocked gases escaping through the centermost portion of the flow conditioner in order to produce a "spiraling motion" of the gas flow. In Gordon, the. discs/plates (148, 150, and 152) are clearly shown as having a hole or space at their centermost portion (see Fig. 14).

Lyman teaches a device for handling heated exhaust that is considered to be in the same field of endeavor as each of applicant's invention and Gordon. In Lyman, an outer tubular housing (10) includes an interior flow conditioner/control means/diffuser (72) in the form of a disc or plate that includes multiple slits formed by outwardly bent vanes (76) that direct a turbulent airflow by directing the airflow in a controlled angular manner (see at least col. 1, lines 37-53). Lyman further expressly provides that the control means/diffuser (72) includes a flat baffle (74) that is located in the centermost portion of the disc (see Fig. 3) that "results in considerable turbulence and substantially blocks and restricts the longitudinal flow of exhaust gases along portions of the longitudinal axis..." (see col. 4, lines 11-16 and see col. 6, lines 4-7). The desirable result of the flat central baffle and the outer inclined vanes serve to "provide radial deflection consistent with desired sound attenuation and engine efficiency" (see col. 4, lines 57-60) and enhance the turbulence and swirling effect of the exhaust gases 12 flowing through the muffler (see col. 6, lines 17-19).

Therefore, in regard to claims 1-4, 6, 8, 10, and 11, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the baffle plates/discs of Gordon to incorporate the structure of the plate/disc/diffuser of Lyman for the desirable purpose of enhancing the turbulence and swirling effect of the exhaust gases flowing through the reactor device (see Lyman, col. 6, lines 17-19) and provide radial deflection consistent with desired sound attenuation and engine efficiency (see Lyman, col. 4, lines 57-60).

Response to Arguments

8. Applicant's arguments filed July 12, 2007 have been carefully considered but they are not persuasive.

Applicant has asserted that the examiner and applicant "agreed"' that the claims of applicant's invention would be in condition for allowance if a fuller description of applicant's flow conditioner is provided. The examiner respectfully notes that this is not an accurate characterization of the record in this application.

In response, the examiner notes that while applicant's invention as disclosed appears to require that the centermost portion of the disc, as was previously noted and again noted above, applicant's claims do not particularly recite such structure. It is well understood that during patent examination claims are to be given their broadest reasonable interpretation consistent with the underlying specification without reading limitations from the specification into the claims. *In re Prater,* 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). In this case, as noted above, the discs (148, 150, 152) of Gordon, while showing an obstruction of the absolute center or centermost portion, the portions of the bent wall portions (166) extending into the center are properly regarded to block "a" central opening as recited.

Applicant has also argued that the reference to Gordon teaches the use of multiple flow conditions whereas applicant's invention is intended to include only one flow conditioner.

In response, the examiner notes that applicant's claims expressly recite "at least one flow conditioner." Further, applicant admits that multiple flow conditioners may be provided (see response, p. 10 and at least applicant's claims 6). Accordingly, applicant's claims cannot be considered to distinguish over any one of the flow conditioners of Gordon, taken alone, which as discussed above, as reconsidered to suggest the flow conditioner as claimed by applicant.

Additionally, the examiner notes that even if applicant's claims were construed to require a obstruction of the centermost portion of the disc as well as the presence of only a single disc to the exclusion of other discs, a disc having such a structure and arrangement is clearly shown in the reference to Lyman, which has alternatively been applied under 35 USC 103(a) to reject applicant's claims. It has been held that regarding rejections under 35 U.S.C. § 103, the proper inquiry should not be limited to the specific structure shown by a reference, but should be into the concepts fairly contained therein, with the overriding question to be determined being whether those concepts would have suggested to one skilled in the art the modification called for by the claims. See *In re Bascom,* 230 F.2d 612, 614, 109 USPQ 98, 100 (CCPA 1956). Further, Under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests *(In re Burckel,* 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979); *In re Lamberti,* 545 F.2d 745, 750, 192 USPQ 278, 280 (CCPA 1976)), as well as the reasonable inferences which the artisan would logically draw from the reference. See *In re Shepard,* 319 F.2d 194, 197, 138 USPQ 148, 150 (CCPA 1963).

In this case, in light of the teachings of Lyman showing a flow conditioner having the identical structure to the flow conditioner both claimed and disclosed that of applicant, a person of ordinary skill in the art would reasonably substitute this flow conditioner for the flow conditioner of Gordan. The benefits of the flow conditioner are clearly stated to provide

enhanced turbulence and swirling effect of exhaust gases (see Lyman, col. 6, lines 17-19), which the examiner notes is also expressly recognized as desirable in Gordan (see Gordan, col. 9, lines 12-18), as well as provides for "optimum balance between sound attenuation of output exhaust gases and overall engine efficiency." (see Lyman; col. 4, lines 36-38).

Accordingly, applicant's claims and arguments have been carefully considered as well as applicant's request for the examiner to identify patentable subject matter pursuant to MPEP 707.07(j). However, in light of evidence of record, the examiner has been unable to identify subject matter that is patentable to applicant.

APPLICANTS REPLY/ARGUMENTS:

Reconsideration of the above rejections 5-8 is respectfully requested after consideration of the following remarks and arguments. As noted above, the previously presented arguments were not persuasive. However, after our last phone conversation and in consideration of the "Interview Summary dated 11/05/07" it is contended that the newly amended claims as presented herein should overcome the rejections. As stated within the "Interview Summary" both parties agree that if the applicant provides a fuller description of the structural distinctions between applicant's invention and the prior art and if such structural distinctions are reflected in the claims, this would place the application in condition for allowance. Both parties also acknowledge that amending the claims to recite proposed structural distinctions would require further consideration and/or examination. Furthermore, the Examiner cautioned applicant that any amendments would not be entered if new matter was incorporated into the disclosure.

As a result the applicant respectfully submits herewith the following arguments and more clearly defines the obvious structural distinctions between the present invention and the

prior art for further examination and/or consideration. Whereby, this should clarify the novel construction, advantages and overall unusual results achieved by the present invention.

Within newly amended claim 1 as submitted herein, kindly note the flow conditioner is now more clearly defined. Namely, the flow conditioner comprises a continuous outside edge and an inside edge of which in combination form a rim. It is true that the '896 reference when broadly considered may have somewhat of a rim. However, the '753 reference clearly does not include any type of rim. More importantly as now claimed, the rim is divided into a 1st section, a 2nd section, a 3rd and 4th section. Each section includes multiple inwardly protruding paddle-shaped blades. Also, each section is separated by a 1st, a 2nd, a 3rd, and 4th crossbar. Still further, each crossbar is integrally formed with the rim and each are integrally formed and attached onto the centralized circular baffle plate. Furthermore, each of the paddle-shaped blades and the crossbars in combination form the vanes and also the blades are distanced apart from the baffle plate. None of the cited references even if combined teach, suggest, imply or recognize the advantages and new end results of this type of configuration.

It can clearly be seen that even if the noted cited references were combined in the manner suggested the end device would most certainly not read on the claims at issue as amended. It is understood that in many cases the shape or size of a component is not considered to be patent ably distinct. However, the present invention is completely "dependant" upon this novel structural shape for the flow conditioner and the new and unusual results would not be achieved without this type of flow conditioner. Thus, shape in this case is absolutely critical. The applicant has discovered through extensive experimentation that the configuration of the paddle-shaped blades, the crossbars and the baffle plate in combination create a highly intensified helical flame that is more controlled and forcibly directed around the baffle plate via openings between the

paddle-shaped blades and the crossbars. It is therefore obvious that the specific shape of the flow conditioner as taught herein is critical for producing the helical flame and the overall function and novel results achieved by the present invention have heretofore not been recognized, addressed or suggested within the prior art.

Within the last conversation between the Examiner and the applicant, it was noted that if the newly claimed structural distinctions were clearly illustrated and evidenced within the drawings (original and replacement sheet) then the structural distinctions are and will not be considered as new material. Therefore, the rim (not numbered but clearly visible), the paddle-shaped blades which in combination with the crossbars form the vanes (30) and the crossbars (34) are not new material as they are clearly shown and evidenced within figure 4.

In view of the above, if the Examiner agrees but does not feel that the present claims are technically adequate and/or if the Examiner (knowing that the applicant is not a skilled Attorney but is applying as a private citizen) can see areas which applicant has failed to point out and distinctly claim but would lead to patentable material, then I respectfully request the Examiner to point out said material and to write acceptable claims pursuant to MPEP 707.07(j) and give the applicant an opportunity to respond further.

CONCLUSION

For all the reasons above, this application is now submitted to contain claims that define a novel and patentable invention. Hence allowance of the application is respectfully submitted to be proper and is respectfully solicited.

Very respectfully,

Ronald E. Loving